

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1 to 39.

Claims 1 to 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramanian et al. (U.S. 6,127,089) in view of Zampini et al. (U.S. 6,503,689).

This rejection is respectfully traversed.

A key feature of the undercoating material of the present invention is employment of a resin component having a substituent group (that is, the group is a part of the molecule of the resin) which is capable of releasing a terminal group to form a sulfonic acid residue upon application of energy, as recited in, e.g., the present claim 1.

The present inventors have found that a layer made of such a material is capable of being washed off together with a patterned photoresist layer, which reduces the number of steps for forming the photolithographic products, and eliminates the necessity of an O₂ plasma ashing step for removing the layer that may damage other layers.

Zampini discloses employment of photoacid generators such as aromatic sulfonic acids as additives (see column 13, line 62 to column 14, line 3 of Zampini).

In general, such a photoacid generator is added to the material for forming, e.g., an undercoating layer in order to adjust the undercoating layer's acidity to the photoresist layer, since otherwise, the acid in the photoresist layer migrates to the undercoating layer during the photolithographic process, which may result in inhibition of the photoresist layer's function. However, a layer made of a material that is a mixture of a resin and the acid generator as a

separate molecule is insoluble in the solution for removing the photoresist layer. Therefore, such material requires an additional step of, e.g., disadvantageous O₂ plasma ashing.

Both Zampini and Subramanian are completely silent about a resin having a photoacid generating group as a part of the molecule thereof. Therefore, one skilled in the art could not have made the present invention having the aforementioned features, based on the disclosure of Zampini and Subramanian, and the present invention is thus unobvious over these prior art references.

For the foregoing reasons, it is apparent that the rejection on Zampini and Subramanian is untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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